

Release notes for ENDF/B Development n-070\_Yb\_173  
evaluation



April 26, 2017

- **psyche** Warnings:

1. Non-threshold reaction with Q value differing from PSYCHE's expectations  
*FILE 3 / SECTION 22 / THE CALCULATED Q 1.04375E+06 DISSAGREES WITH THE GIVEN Q 9.47487E+05 (0): Iffy Q*

```
FILE 3
SECTION 22
THE CALCULATED Q 1.04375E+06 DISSAGREES WITH THE GIVEN Q 9.47487E+05
```

- **fudge-4.0** Warnings:

1. Missing a channel with a particular angular momenta combination  
*resonances / resolved / MultiLevel\_BreitWigner (Error # 0): missingResonanceChannel*

```
WARNING: Missing a channel with angular momenta combination L = 0, J = 1.0 and S = 1.0 for "capture"
```

2. Potential scattering hasn't converted, you need more L's!  
*resonances / resolved (Error # 1): potentialScatteringNotConverged*

```
WARNING: Potential scattering hasn't converged by L=0 at E=1800.0 eV, xs[0]/xs[0]=100.0% > 0.1%
```

3. Cross section does not match sum of linked reaction cross sections  
*crossSectionSum label 0: total (Error # 0): CS Sum.*

```
WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.17%
```

4. Cross section does not match sum of linked reaction cross sections  
*crossSectionSum label 1: nonelastic (Error # 0): CS Sum.*

```
WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.84%
```

- **fudge-4.0** Errors:

1. Calculated and tabulated Q values disagree.  
*reaction label 16: n/multiplicity:'2'] + Yb172 (Error # 0): Q mismatch*

```
WARNING: Calculated and tabulated Q-values disagree: -6356564.127410889 eV vs -6367318. eV!
```

2. Calculated and tabulated Q values disagree.  
*reaction label 17: n/multiplicity:'3'] + Yb171 (Error # 0): Q mismatch*

```
WARNING: Calculated and tabulated Q-values disagree: -14376025.28326416 eV vs -14386780. eV!
```

3. Calculated and tabulated Q values disagree.  
*reaction label 18: n + H1 + Tm172 (Error # 0): Q mismatch*

```
WARNING: Calculated and tabulated Q-values disagree: -7454508.084533691 eV vs -7465262. eV!
```

4. Calculated and tabulated Q values disagree.  
*reaction label 19: n + H2 + Tm171 (Error # 0): Q mismatch*

```
WARNING: Calculated and tabulated Q-values disagree: -11465653.51812744 eV vs -11476410. eV!
```

5. Calculated and tabulated Q values disagree.  
*reaction label 20: Yb174 + gamma (Error # 0): Q mismatch*

**WARNING: Calculated and tabulated Q-values disagree: 7475387.968658447 eV vs 7464633. eV!**

6. Calculated and tabulated Q values disagree.  
*reaction label 21: n + He4 + Er169 (Error # 0): Q mismatch*

**WARNING: Calculated and tabulated Q-values disagree: 958241.2035522461 eV vs 947486.7 eV!**

7. Calculated and tabulated Q values disagree.  
*reaction label 22: H1 + Tm173\_s (Error # 0): Q mismatch*

**WARNING: Calculated and tabulated Q-values disagree: -504302.4247741699 eV vs -515056.9 eV!**

8. Calculated and tabulated Q values disagree.  
*reaction label 23: H2 + Tm172\_s (Error # 0): Q mismatch*

**WARNING: Calculated and tabulated Q-values disagree: -5229941.983612061 eV vs -5240696. eV!**

9. Calculated and tabulated Q values disagree.  
*reaction label 24: H3 + Tm171\_s (Error # 0): Q mismatch*

**WARNING: Calculated and tabulated Q-values disagree: -5208420.577514648 eV vs -5219175. eV!**

10. Calculated and tabulated Q values disagree.  
*reaction label 25: He3 + Er171\_s (Error # 0): Q mismatch*

**WARNING: Calculated and tabulated Q-values disagree: -6680562.590606689 eV vs -6691317. eV!**

11. Calculated and tabulated Q values disagree.  
*reaction label 26: He4 + Er170\_s (Error # 0): Q mismatch*

**WARNING: Calculated and tabulated Q-values disagree: 8215481.273651123 eV vs 8204726. eV!**

- **njoy2012 Warnings:**

1. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (0): HEATR/hinit (4)*

---message from hinit---mf6, mt 16 does not give recoil za= 70172  
one-particle recoil approx. used.

2. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (1): HEATR/hinit (4)*

---message from hinit---mf6, mt 17 does not give recoil za= 70171  
one-particle recoil approx. used.

3. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (2): HEATR/hinit (4)*

---message from hinit---mf6, mt 22 does not give recoil za= 70173  
one-particle recoil approx. used.

4. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (3): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 28 does not give recoil za= 70173
one-particle recoil approx. used.
```

5. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (4): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 32 does not give recoil za= 70173
one-particle recoil approx. used.
```

6. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (5): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 51 does not give recoil za= 70173
one-particle recoil approx. used.
```

7. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (6): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 52 does not give recoil za= 70173
one-particle recoil approx. used.
```

8. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (7): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 53 does not give recoil za= 70173
one-particle recoil approx. used.
```

9. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (8): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 54 does not give recoil za= 70173
one-particle recoil approx. used.
```

10. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (9): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 55 does not give recoil za= 70173
one-particle recoil approx. used.
```

11. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (10): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 56 does not give recoil za= 70173
one-particle recoil approx. used.
```

12. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (11): HEATR/hinit (4)*

```
---message from hinit---mf6, mt 57 does not give recoil za= 70173
one-particle recoil approx. used.
```

13. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (12): HEATR/hinit (4)*

---message from hinit---mf6, mt 58 does not give recoil za= 70173  
one-particle recoil approx. used.

14. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (13): HEATR/hinit (4)*

---message from hinit---mf6, mt 59 does not give recoil za= 70173  
one-particle recoil approx. used.

15. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (14): HEATR/hinit (4)*

---message from hinit---mf6, mt 60 does not give recoil za= 70173  
one-particle recoil approx. used.

16. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (15): HEATR/hinit (4)*

---message from hinit---mf6, mt 61 does not give recoil za= 70173  
one-particle recoil approx. used.

17. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (16): HEATR/hinit (4)*

---message from hinit---mf6, mt 62 does not give recoil za= 70173  
one-particle recoil approx. used.

18. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (17): HEATR/hinit (4)*

---message from hinit---mf6, mt 63 does not give recoil za= 70173  
one-particle recoil approx. used.

19. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (18): HEATR/hinit (4)*

---message from hinit---mf6, mt 64 does not give recoil za= 70173  
one-particle recoil approx. used.

20. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (19): HEATR/hinit (4)*

---message from hinit---mf6, mt 91 does not give recoil za= 70173  
one-particle recoil approx. used.

21. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (20): HEATR/hinit (4)*

---message from hinit---mf6, mt203 does not give recoil za= 69173  
one-particle recoil approx. used.

22. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (21): HEATR/hinit (4)*

---message from hinit---mf6, mt204 does not give recoil za= 69172  
one-particle recoil approx. used.

23. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (22): HEATR/hinit (4)*

```
--message from hinit---mf6, mt205 does not give recoil za= 69171
one-particle recoil approx. used.
```

24. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (23): HEATR/hinit (4)*

```
--message from hinit---mf6, mt206 does not give recoil za= 68171
one-particle recoil approx. used.
```

25. Recoil is not given, so one-particle recoil approximation used.  
*heatr...prompt kerma (24): HEATR/hinit (4)*

```
--message from hinit---mf6, mt207 does not give recoil za= 68170
one-particle recoil approx. used.
```

- **njoy2012 Errors:**

1. An unidentified mismatch in a photon production sum  
*check...ace consistency check (0): Gamma sum*

```
check photon production sum
consis: mismatch at 1.035925E-03 gpd= 3.377209E-01 sum= 3.376821E-01
```

2. An unidentified mismatch in a photon production sum  
*check...ace consistency check (1): Gamma sum*

```
check photon production sum
consis: mismatch at 1.282137E-03 gpd= 2.277089E-01 sum= 2.277460E-01
```

3. An unidentified mismatch in a photon production sum  
*check...ace consistency check (2): Gamma sum*

```
check photon production sum
consis: mismatch at 1.283356E-03 gpd= 1.973447E-01 sum= 1.973232E-01
```

4. An unidentified mismatch in a photon production sum  
*check...ace consistency check (3): Gamma sum*

```
check photon production sum
consis: mismatch at 1.293381E-03 gpd= 1.205598E-01 sum= 1.205368E-01
```

5. An unidentified mismatch in a photon production sum  
*check...ace consistency check (4): Gamma sum*

```
check photon production sum
consis: mismatch at 1.295955E-03 gpd= 1.212326E-01 sum= 1.212156E-01
```

6. An unidentified mismatch in a photon production sum  
*check...ace consistency check (5): Gamma sum*

```
check photon production sum
consis: mismatch at 1.296700E-03 gpd= 1.228473E-01 sum= 1.228699E-01
```

7. An unidentified mismatch in a photon production sum  
*check...ace consistency check (6): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.297445E-03 gpd= 1.253589E-01 sum= 1.253846E-01
```

8. An unidentified mismatch in a photon production sum  
*check...ace consistency check (7): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.298935E-03 gpd= 1.337013E-01 sum= 1.336847E-01
```

9. An unidentified mismatch in a photon production sum  
*check...ace consistency check (8): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.317792E-03 gpd= 2.377563E-01 sum= 2.377285E-01
```

10. An unidentified mismatch in a photon production sum  
*check...ace consistency check (9): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.392033E-03 gpd= 2.765545E-01 sum= 2.765248E-01
```

11. An unidentified mismatch in a photon production sum  
*check...ace consistency check (10): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.393095E-03 gpd= 2.534111E-01 sum= 2.534459E-01
```

12. An unidentified mismatch in a photon production sum  
*check...ace consistency check (11): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.394157E-03 gpd= 2.378477E-01 sum= 2.378811E-01
```

13. An unidentified mismatch in a photon production sum  
*check...ace consistency check (12): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.394688E-03 gpd= 2.325104E-01 sum= 2.325364E-01
```

14. An unidentified mismatch in a photon production sum  
*check...ace consistency check (13): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.596570E-03 gpd= 3.472470E-01 sum= 3.472843E-01
```

15. An unidentified mismatch in a photon production sum  
*check...ace consistency check (14): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.645726E-03 gpd= 2.997946E-01 sum= 2.998290E-01
```

16. An unidentified mismatch in a photon production sum  
*check...ace consistency check (15): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.647078E-03 gpd= 2.210783E-01 sum= 2.210475E-01
```

17. An unidentified mismatch in a photon production sum  
*check...ace consistency check (16): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.650384E-03 gpd= 1.463540E-01 sum= 1.463391E-01
```

18. An unidentified mismatch in a photon production sum  
*check...ace consistency check (17): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.651173E-03 gpd= 1.374732E-01 sum= 1.374375E-01
```

19. An unidentified mismatch in a photon production sum  
*check...ace consistency check (18): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.656694E-03 gpd= 1.064801E-01 sum= 1.064687E-01
```

20. An unidentified mismatch in a photon production sum  
*check...ace consistency check (19): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.658497E-03 gpd= 1.029368E-01 sum= 1.029629E-01
```

21. An unidentified mismatch in a photon production sum  
*check...ace consistency check (20): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.662254E-03 gpd= 1.026677E-01 sum= 1.026986E-01
```

22. An unidentified mismatch in a photon production sum  
*check...ace consistency check (21): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.664207E-03 gpd= 1.064802E-01 sum= 1.065052E-01
```

23. An unidentified mismatch in a photon production sum  
*check...ace consistency check (22): Gamma sum*

```
check photon production sum
  consis: mismatch at 1.666160E-03 gpd= 1.141052E-01 sum= 1.140789E-01
```